

Monitoring and analysis plan for metals assessment around Bullseye Glass.

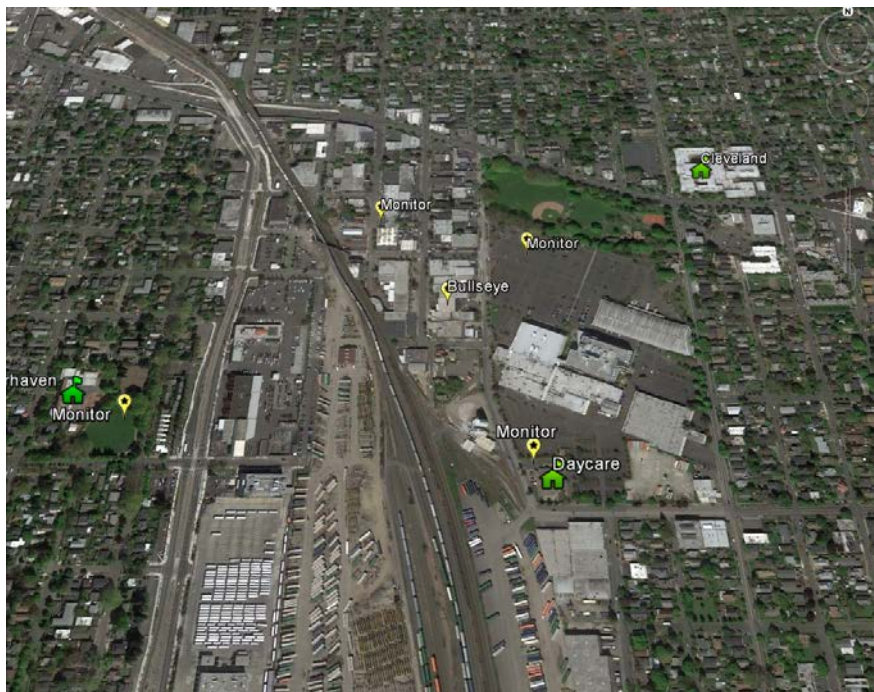
Introduction

Method

Sampling locations

Sampling will be done in four directions emanating from Bullseye Glass. The Samplers will be place near areas where children play. Children are especially susceptible to air toxics because they run around more causing them to breathe more air and they are still growing and developing.

The three sites near children's play areas are near the Powell Park field across from Cleveland High School, near Winterhaven Elementary School, and at the Daycare just south of the Fred Meyers Head Quarters building. A fourth site will be set up to the northwest of Bullseye to capture the pollutants going over the business district. Wind data collected in October showed most of the elevated days occurred when the wind was blowing from the SE to the NW. This site will capture those samples.



A proposed sampling map for metals monitoring near Bullseye Glass.

Start dates –

Site Timing

Daycare started on Feb 9th running 6am to 6pm samples.

Fred Meyer parking lot or next door at Powell Park. Awaiting power drop - This will start 2/17.

Winterhaven is waiting on power from the City or Portland Parks 2/17.

Site to the North can start on Feb 12th.

Met sites all ready operational at Reed College and next to Bullseye.

Sampling methods

PM10 Metals

DEQ is going to use two methods to collect data around Bullseye because of equipment limitations and difficulty getting power to some of the sites. DEQ has low volume (LV) BGI samplers and Low volume Air Metrics (16.7lpm) samplers which run on battery power. These will be deployed in areas where we can't get power to run the Hi Volume samplers.

The LV method uses the EPA School Air Toxics metals low volume (LV) sampler method with flow of 16.7LPM. The filter media is Teflon and the analysis is done using ICP-MS.

The HV method is EPA TO-15 which uses a Hi-Volume (HV) sampler (40 cfm) to collect samples from midnight to midnight at 40 cfm. The filter media is quartz. The analysis is done using ICP-MS. This is a NATTS TAD method.

Both methods are EPA approved methods but may result in slightly different measurements. A collocated site will help us tie these two methods together to see how well they agree. The HV method is also used at three other sites in Portland.

TSP Hexavalent Chrome

DEQ will deploy a 15lpm, flow controlled sampler (BGI sampler) with a Chrome 6+ sampler. This is a NATTS TAD method.

Continuous sampling

DEQ will also deploy a portable Met One E-Sampler (nephelometer) to track diurnal patterns. This will show when most of the particulate is occurring. This will be deployed at the daycare.

Meteorology

DEQ will also include wind speed and wind direction met stations that sit on top of roof tops. Met One 010 Wind Speed sensor, 020 Wind direction, with Campbell data logger.

Commented [HC1]: I believe the AirMetrics samplers run at 5 lpm so these may not be the best for metals analysis.

Commented [HC2]: The correct lab method for metals is IO3.5.

Commented [HC3]: The NATTS TAD method uses a PM10 high volume sampler. The PM10 low volume method is what was used for the School Air Toxics study. Both use CARB method 039 for lab analysis.

Sampling Calendar.

Daycare schedule:

February						
Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
	1	2	3	4	5	6
				Prep samplers	Set up site, set up sample, Audit sampler	
7	8	9	10	11	12	13
Primary 2 Tentative start	Sample 6am to 6pm for DHS	Sample 6am to 6pm for DHS	Sample 6am to 6pm for DHS	Sample 6am to 6pm for DHS	Sample 6am to 6pm for DHS	Sample 24 hrs for DEQ
14	15	16	17	18	19	20
Sample 24 hrs for DEQ	Sample 6am to 6pm for DHS	Sample 6am to 6pm for DHS + field blank	Sample 6am to 6pm for DHS	Sample 6am to 6pm for DHS	Sample 6am to 6pm for DHS	Sample 24 hrs for DEQ
21	22	23	24	25	26	27
Sample 24 hrs for DEQ	Set up and retrieve sample		Primary 1 & 2	Set up and retrieve sample		Sample 24 hrs for DEQ
28	29	1-Mar	2	3	4	5
Set up and retrieve sample	Set up and retrieve sample	Sample 24 hrs for DEQ	Follow EPA 1/6 schedule going forward			

Winterhaven, Fred Meyer Parking lot, and NW site schedule.

February						
Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
	1	2	3	4	5	6
				Prep samplers	Set up site, set up sample, Audit sampler	
7	8	9	10	11	12	13
Primary 2 Tentative start	Sample 6am to 6pm for DHS	Sample 6am to 6pm for DHS	Sample 6am to 6pm for DHS	Sample 6am to 6pm for DHS	Sample 6am to 6pm for DHS	Sample 24 hrs for DEQ
14	15	16	17	18	19	20
	Sample 6am to 6pm for DHS	Sample 6am to 6pm for DHS + field blank	Sample 6am to 6pm for DHS	Sample 6am to 6pm for DHS	Sample 6am to 6pm for DHS	Sample 24 hrs for DEQ
21	22	23	24	25	26	27
Sample 24 hrs for DEQ	Set up and retrieve sample		Sample 24 hrs for DEQ	Set up and retrieve sample		Sample 24 hrs for DEQ
28	29	1-Mar	2	3	4	5
Set up and retrieve sample	Set up and retrieve sample	Sample 24 hrs for DEQ	Follow EPA 1/6 schedule going forward			